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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,999	07/08/2003	Yoshinori Yamamoto	50212-511	6259

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EXAMINER

ROJAS, OMAR R

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/613,999

Applicant(s)

YAMAMOTO ET AL.

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-13, 15-20, 22-27, 29-32 and 34-38 is/are rejected.
- 7) ☒ Claim(s) 7, 14, 21, 28 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Detailed Action.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 2, 2006 has been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-6, 8-13, 15-20, 22-27, 29-32, and 34-38 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1-6, 8-13, 15-20, 22-27, 29-32, and 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,711,332 B2 to Hebgen et al. ("Hebgen") in view of EP 1063542 A1 to Sumitomo Electric (hereinafter "the '542 application"). The '542 application was previously made of record.**

*In re* claim 8, Hebgen discloses a dispersion compensator comprising:

a DCF 120 having an accumulated chromatic dispersion of  $2.39\text{km} \times -160\text{ ps/nm-km} = -382\text{ ps/nm}$  at about  $1.55\text{ }\mu\text{m}$  (see column 9, lines 15-30).

Thus, Hebgen only differs from claim 8 in that Hebgen does not expressly teach a housing having a volume of  $310\text{ cm}^3$  or less for accommodating the DCF 120.

The '542 application, on the other hand, teaches a housing 80 which is used to accommodate a DCF having a length of ten kilometers (10 km) (see paragraph [0032]). The housing 80 inherently has a volume as any housing would.

The motivation for combining the housing 80 of the '542 application with Hebgen is to protect and store the DCF 120 of Hebgen.

Ten kilometers is much greater than 2.39 kilometers. Therefore, the housing 80 disclosed by the '542 application does not have to be as big to accommodate the DCF 120 of Hebgen since Hebgen's DCF only has a length of 2.39 km. In other words, the housing 80 can have a much smaller volume. Changes in size are generally not patentable differences. Modifying the housing 80 to have a smaller volume of 310 cm<sup>3</sup> or less would be within the level of one of ordinary skill in the art and would have been advantageous in order to save space, especially when used with the shorter length DCF of Hebgen. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 8 in view of Hebgen combined with the '542 application.

*In re* claim 9-11, the recited limitations do not positively recite any additional structure and, therefore, are considered inherently present when the '542 application is combined with Hebgen to meet the limitations specified by claim 8.

*In re* claim 12, the DCF of Hebgen has an identical triple-cladding structure to that recited by claim 12 as seen in Fig. 1. Thus, claim 12 is obvious in view of Hebgen combined with the '542 application for the same reasons mentioned with respect to claim 8.

*In re* claim 13, the recited limitation does not positively recite any additional structure and, therefore, is considered inherently present in Hebgen because his DCF has the same structure. Thus, claim 13 is obvious in view of Hebgen combined with the '542 application for the same reasons mentioned with respect to claim 12.

*In re* claim 35, the DCF of Hebgen has a mode field diameter of 4.5  $\mu\text{m}$  or less as seen in column 13, Table 1. Thus, claim 35 is obvious in view of Hebgen combined with the '542 application for the same reasons mentioned with respect to claim 8.

*In re* claims 1, 15, and 22 the previous remarks concerning claims 8-13 and 35 are incorporated herein. Hebgen in view of the '542 application further differs from claims 1, 15, and 22 in that neither reference expressly teaches the accumulated chromatic dispersion ("ACD") value(s) or the housing volume(s) recited by claims 1, 15, and 22. However, the ACD value simply involves selecting an appropriate length of DCF. As mentioned, changes in size are generally not patentable differences. In the case at hand, an appropriate length of the DCF 120 of Hebgen can be selected by the ordinary skilled artisan to meet any and all of the ACD values recited claims 1, 15, and 22. The motivation for selecting a different length of Hebgen's DCF to achieve the same ACD value(s) recited by claims 1, 15, and 22 would be to compensate for positive dispersion of a different length of transmission fiber (see Hebgen at column 1, lines 5-45). As is known to those skilled in the art, the amount of negative dispersion compensation required (i.e., the ACD) depends upon the length of positive dispersion transmission line that is to be

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Thus, selecting the ACD values recited by claims 1, 15, and 22, are obvious in view of Hebgen alone. As mentioned with respect to claim 8, using a housing to protect and store the DCF of Hebgen would have also been obvious in view of the '542 application. Adjusting the volume of the housing 80 disclosed by the '542 application would have further been obvious in order to save physical space when accommodating a smaller length of DCF. The motivation for modifying the volume of the housing 80 disclosed by the '542 application to equal the volume(s) specified by claims 1, 15, and 22 would be to minimize the size of the housing (thereby saving space) while at the same time providing adequate storage of the appropriate length of DCF disclosed by Hebgen. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 1, 15, and 22 in view of Hebgen combined with the '542 application.

*In re* claims 2-4, 16-18, 23-25, and 29-30, the additional limitations mentioned by these claims do not positively recite any additional structure and, therefore, are considered inherently present when the '542 application is combined with Hebgen to meet the limitations specified by claims 1, 15, and 22.

*In re* claims 5, 19, 26, and 31, the DCF of Hebgen has an identical triple-cladding structure to that recited by claims 5, 19, 26, and 31 as seen in Fig. 1. Thus, claims 5, 19, 26, and 31 are obvious in view of Hebgen combined with the '542 application for the same reasons mentioned with respect to claim 1, 15, 22, and 29.

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*In re* claims 6, 20, 27, and 32, the recited limitation does not positively recite any additional structure and, therefore, is considered inherently present in Hebgen because his DCF has the same structure. Thus, claims 6, 20, 27, and 32 are obvious in view of Hebgen combined with the '542 application for the same reasons mentioned with respect to claims 5, 19, 26, and 31,

*In re* claim 34 and 36-38, the DCF of Hebgen has a mode field diameter of 4.5  $\mu\text{m}$  or less as seen in column 13, Table 1. Thus, claims 34 and 36-38 are obvious in view of Hebgen combined with the '542 application for the same reasons mentioned with respect to claims 1, 15, 22, and 29.

#### ***Allowable Subject Matter***

5. Claims 7, 14, 21, 28, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: With regards to claims 7, 14, 21, 28, and 33, the primary reason for allowance of the claims is the inclusion of an optical fiber satisfying the two conditions involving “a/c” and “b/c” as recited by the claims. In the examiner’s opinion, the conditions recited by claim 7, 14, 21, 28, and 33 suggest a specific optical fiber structure not taught or fairly suggested by the prior art of record.

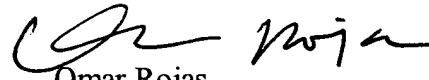
#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
July 15, 2006



Rodney Bovernick  
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